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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/643,004

08/21/2000

Garry A. Mercaldi

MI22-1358

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7590

12/20/2002

WELLS ST. JOHN ROBERTS GREGORY & MATKIN P.S.
601 W. FIRST AVENUE
SUITE 1300
SPOKANE, WA 99201-3828

EXAMINER

DANG, TRUNG Q

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 12/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/643,004

Applicant(s)

MERCALDI, GARRY A.

Examiner

Trung Q. Dang

Art Unit

2823

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-41 and 47-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 56-59 is/are allowed.
- 6) ☒ Claim(s) 9, 10, 13-16, 18, 21, 22, 25-27, 31, 33, 35, 37, 38, 40 and 52-54 is/are rejected.
- 7) ☒ Claim(s) 11, 12, 17, 19, 20, 23, 24, 28-30, 32, 34, 36, 39, 41 and 55 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-3, 6-9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Applicant's election without traverse of the Group II invention, claims 9-41 and 47-59 in Paper No. 12 is acknowledged.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9-10, 13-16, 18, 25-27, 31, 33, 37, 38, 40, 52-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Steele et al. (U.S. Pat. 5,273,930).

The reference teaches the invention as claimed in that it discloses a process comprising the steps of: providing a substrate having a first surface comprising an oxide and a second surface comprising a semiconductor material (col. 3, lines 30-32); forming a seeding layer 15 (nucleation layer) on said first surface and said second surface (col.5, lines 24-36); non-selectively forming a deposition layer 16 of Si-Ge on said seeding layer (col. 6, lines 14-20). Note that, since the claimed first part of the nucleation layer and the claimed second part of the nucleation layer do not limit to two different layers, the single seeding layer 15 of the reference is readable on this limitation in that it can be considered as having two parts: a first part formed on a first surface of oxide and a second part formed on a second surface of semiconductor (see Fig. 2). Also note that the Si-Ge epitaxial film 16 can not be formed on oxide layer 13 (col. 2, lines 39-43), hence the

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first surface (oxide surface) exhibits a property of the deposition layer 16 forming less readily than that of second surface (semiconductor surface).

As for claim 27, see col. 6 for the deposition of a polysilicon layer on the Si-Ge layer.

As for claims 31 and 38, when the Si-Ge layer is considered as the claimed initiation layer, the polysilicon layer deposited on the Si-Ge read on the claimed deposition layer.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 22, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steele cited above.

Steele teaches a process as noted above except for a specific teaching of the thickness of the nucleation layer as claimed. However, in col. 6, lines 18-22, Steele states that the thickness of the seeding layer is not a limitation. Thus, selecting a thickness of the seeding layer in a range as claimed would have been obvious to one having ordinary skill in the art because it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. In re Boesch, 617 F.2d

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272, 205 USPQ 215 (CCPA 1980); In re Sola 25 USPQ 433 (CCPA); In re Waite 77 USPQ 586 (CCPA).

3. Claims 47-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble of claim 47 recites a deposition method, but the body of the claim does not have at least one positive step that is required for a method claim. Since claims 47-51 are indefinite and cannot be understood, a rejection over prior art can not be made at this time.

4. Claims 11, 12, 17, 19, 20, 23, 24, 28-30, 32, 34, 36, 39, 41, and 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is (703) 308-2548. The examiner can normally be reached on weekdays from 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794. The fax phone number for this Group is (703) 305-3432 or (703) 308-7725.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read "Trung Dang". The signature is fluid and cursive, with the first name "Trung" and the last name "Dang" clearly distinguishable.

Trung Dang

Primary Examiner, Group 2800